

**A new species of *Anilocra* (Crustacea: Isopoda: Cymothoidae),
ectoparasitic on the mako shark *Isurus oxyrinchus***

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Abstract.—The description of a new species of the isopod genus *Anilocra* (Cymothoidae), ectoparasitic on the shark *Isurus oxyrinchus*, from the Gulf of Mexico, off the Port of Veracruz, is presented. The diagnostic characters of *Anilocra elviae* are: ornamentations in the first four pereonites, large eyes, bilobed labium, 14 setae on the third article of the mandibular palp, dactyli of pereopods 1–6 strongly curved, pleopods thick and large, and uropods extending well beyond the posterior margin of the pleotelson.

The genus *Anilocra* Leach, 1818 (Isopoda: Cymothoidae) is composed of species that are ectoparasitic on a wide variety of fishes belonging to a number of families worldwide (Trilles 1994). Although 10 of the 46 species of *Anilocra* have been reported for the Caribbean Sea (Schioedte & Meinert 1881, Williams & Williams 1981, Kensley & Schotte 1989, 2000), only one, *A. acuta* Richardson, 1910, has been previously found in the Gulf of Mexico (Bowman et al. 1977).

Regarding the hosts, many isopod species have been reported as elasmobranch ectoparasites from all the world's oceans, including *Anilocra physodes* (Linnaeus, 1758), found in *Torpedo* and *Squatina* (Trilles 1994). In the present study a new species of *Anilocra*, ectoparasitic on the mako shark, *Isurus oxyrinchus*, Rafinesque, 1810, is described from the Gulf of Mexico.

Isopods were removed from the shark and preserved in 70% ethanol and measured for total length (TL, from anterior margin of head to posterior margin of pleotelson) and maximum width (W). Mouthparts and appendages were dissected and figures were drawn using a Nikon stereo-

microscope with a camera lucida. Type specimens are deposited in the National Crustacean Collection (CNCR) of the Institute of Biology, of the National Autonomous University of Mexico (UNAM), Mexico City.

Anilocra elviae, new species
Figs. 1–2

Material examined.—Holotype (female), 37.4 mm TL, 17 mm W (CNCR 18873); paratype (male), 25 mm TL, 7 mm W (CNCR 18873). The host shark (1.16 m of standard length) was captured with a long line set at a mean depth of 35 m, in waters of the Gulf of Mexico off the Port of Veracruz, Mexico (19°12'N, 95°39'W), in June of 1999, by the commercial vessel *Alta Azul*. Both isopods were removed from the host's claspers.

Description of holotype.—Body elongated, oval-shaped, twice as long as wide. Head partially sunken in pereonite 1, lateral margins converging towards a projected, broadly convex rostrum (Fig. 1b). Eyes big, occupying $\frac{2}{3}$ of head. In lateral view, pereonites 1–3 flat, becoming progressively

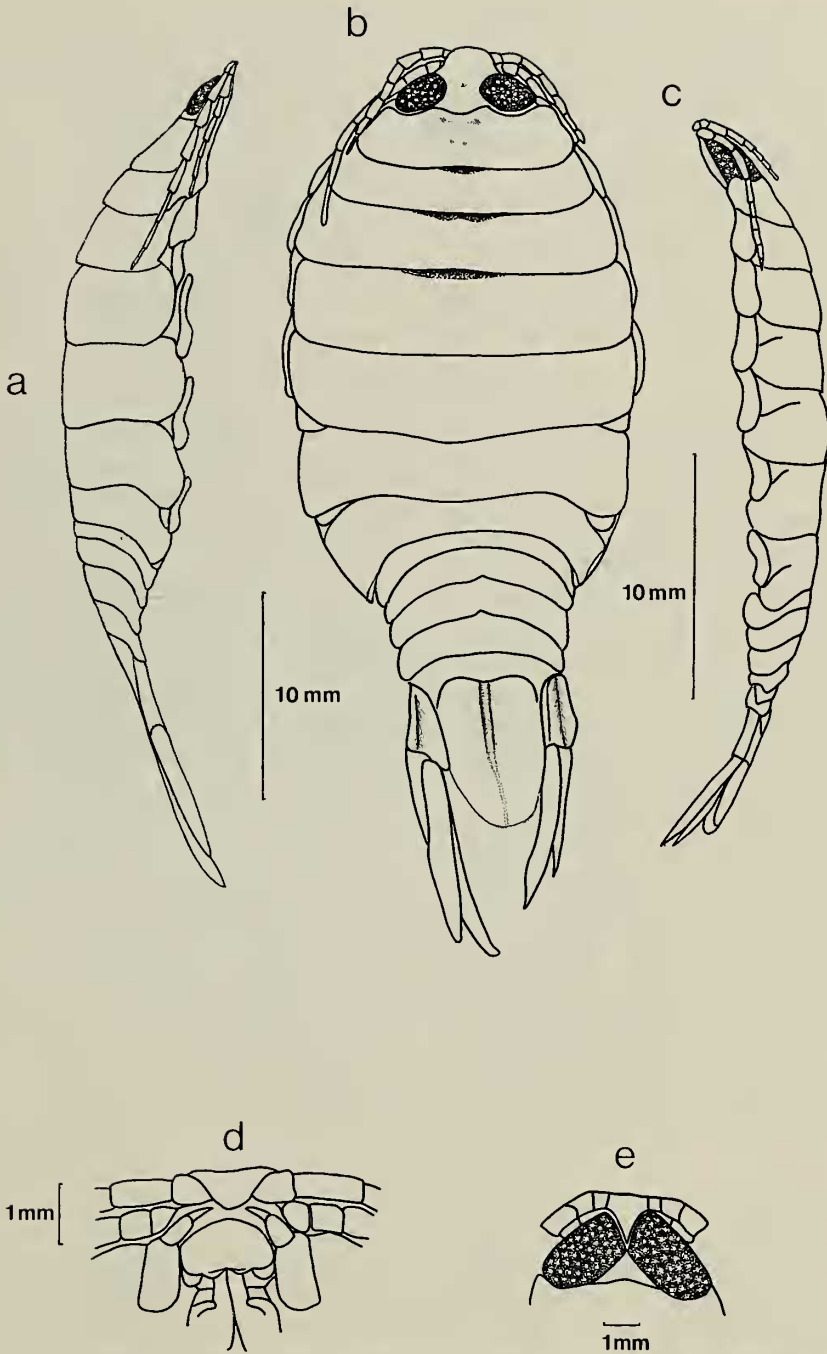


Fig. 1. *Anilocra elviae*, new species (CNCR 18873), female holotype (a, b, d) and male paratype (c, e): a, lateral view; b, dorsal view; c, lateral view; d, head, ventral view; e, head, dorsal view.

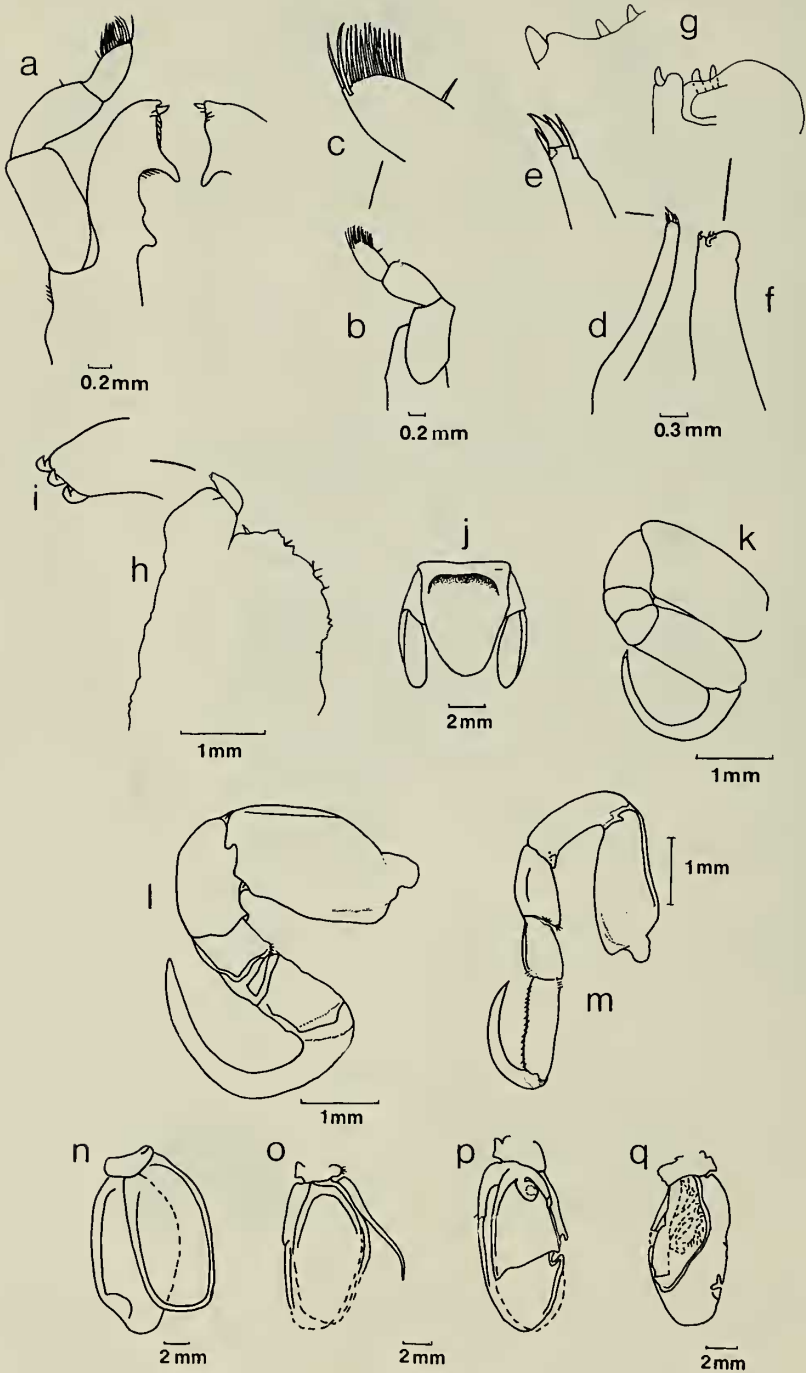


Fig. 2. *Anilocra elviae*, new species, female holotype (CNCR 18873) except for j from paratype: a, right mandible; b, left mandibular palp; c, detail of left mandibular palp; d, maxillule 2; e, detail of maxillule 2; f, maxilla 1; g, detail of maxilla 1; h, maxilliped; i, detail of apex of maxilliped; j, pleotelson, dorsal view; k, pereopod 1; l, pereopod 6; m, pereopod 7; n, pleopod 1; o, pleopod 2; p, pleopod 3; q, pleopod 5.

Table 1.—Comparison of the genus *Anilocra* Leach, 1818, with *Pleopodias* Richardson, 1910.

	<i>Anilocra</i>	<i>Pleopodias</i>
Cephalon	Anterior margin folded ventrally not concealing basal article of antennule	Anterior margin folded ventrally concealing basal article of antennule
	Posterior margin weakly or not trilobed	Posterior margin not trilobed
Pleon	Becoming narrower posteriorly	Not becoming narrower posteriorly
Maxilla	Medial lobe partially fused	Medial lobe distinct
	Spines small and simple	Spines prominent and nodulose
Mandibular palp	Articles robust, article 3 setose and shorter than article 2	Articles slender, article 3 longer than article 2
Pereiopod 7	With few spines	With many spines

higher; pereonite 5 the highest, remaining pereonites decreasing in height posteriorly (Fig. 1a). Pereonite 1 with two small depressions, followed posteriorly by shallow groove parallel to posterior margin. Pereonites 2–3 with middle depressions on anterior margin. Pereonite 4 with depression on anterior margin, covering middle $\frac{1}{3}$ of margin. Pereonites 5–7 smooth (Fig. 1b). First antenna with articles decreasing in diameter posteriorly, reaching posterior margin of the pereonite 1. Second antenna reaching the posterior margin of pereonite 3 (Fig. 1a). Cephalon folded ventrally, appearing as triangular plate, longer than diameter of first antenna (Fig. 1d). Labrum wider than long, superior margin convex; labium bilobed. Mandible with strong, pigmented tooth, inserted subdistally; distal article short, armed with 14 apical setae, middle article with distolateral seta (Fig. 2a–c). First maxilla elongate, with 3 short, curved distal teeth (Fig. 2f–g). Second maxilla slender, elongated, with 4 apical teeth, second one thicker (Fig. 2d–e). Maxilliped with article 3 longer than wide, bearing 3 distal, short, hook-shaped spines (Fig. 2h–i). Pereiopods 1–6 with dactylus strong, deeply curved, reaching articulation of articles 4–5 (Fig. 2k–l). Pereiopod 7, the longest, propodus longer than wide, dactylus not as curved as in pereiopods 1–6 (Fig. 2m). Coxae elongated, coxae 1–4 barely touching, coxae 4–7 with posterior portion curved downwards. Pleonite 1 with lateral portions exposed, protected by posterior lateral lobes of last pereon-

ite. Remaining pleonites free, curved backwards. Pleotelson longer than wide, rounded posterior margin, low longitudinal crest along central portion. Pleopods foliate, borders thicker in both rami, bulky and long, difficult to fold under pleon, easily observable in dorsal view. Pleopod 1 with rami of unequal size (Fig. 2n). Pleopod 2 of male, with appendix masculina of about the same length as internal ramus (Fig. 2o). Pleopod 3 with the endopod shorter than exopod, with small basal fold (Fig. 2p). Pleopod 5 with the endopod $\frac{3}{4}$ the length of exopod, with more than 6 folds. Uropods elongated, narrow, rami of unequal length, extending well beyond posterior margin of telson.

Description of paratype.—Differing from holotype in the following respects: smaller in size; body narrower, elongated; eyes bigger, approximately rectangular, touching each other; anterior pereonites smooth, without depressions; uropods extending slightly beyond posterior margin of pleotelson.

Remarks.—The new species described herein is placed in the genus *Anilocra* based on the following characters, which separate it from the morphologically similar *Pleopodias* Richardson, 1910 (Table 1): posterior margin of cephalon weakly trilobed, anterior portion of cephalon folded ventrally not concealing basal article of antennule, pleon not becoming narrower posteriorly, medial lobe of maxilla partially fused, spines on the maxilla small and simple, articles of mandibular palp robust, article 3

setose and shorter than article 2, and pereopod 7 with few spines. However, in the new species the antennular articles 4–8 are intermediate between those of *Anilocra* and *Pleopodias* shown by Bruce (1986).

In addition, *A. elviae* differs from *A. morsicata* Bruce, 1987, the most morphologically similar species, in possessing ornamentations in the first 4 pereonites (smooth in *A. morsicata*), bigger eyes, a clearly bilobed labium, 14 setae on the third article of the mandibular palp (10 in *A. morsicata*), dactyli of pereopods 1–6 more strongly curved, and thicker and larger pleopods, visible in dorsal view. Moreover, *A. elviae* is the first species of the genus recorded from the mako shark.

Etymology.—The species is named after first author's wife Elvia Perez.

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